

TAXI FARE DISCOUNTING DEVICE

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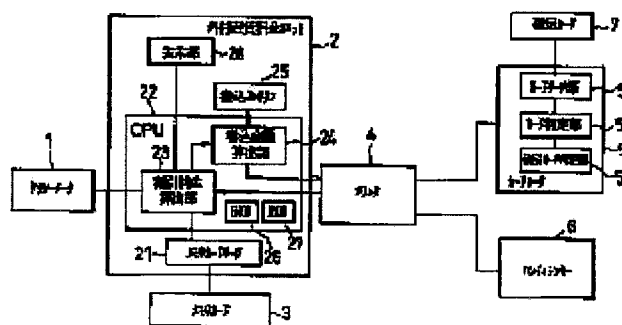
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Abstract of JP10255086

PROBLEM TO BE SOLVED: To automatically discount a taxi fare to a specific person to stop a discount operation through a button, etc., and also to perform correct discount of the taxi fare to the specific person. **SOLUTION:** A taxi meter 1 calculates a taxi fare based on the taxi traveling distance and traveling time, a card reader 5 reads magnetic data and discount information which are stored on a magnetic card 7, a card deciding part 52 collates the read magnetic data with information about a usable card which is preliminarily stored in memory and decides the transaction authentication of the magnetic card, and a discount fare calculating part 23 calculates a taxi discount fare based on discount information and the calculated taxi fare when the magnetic card transaction is authenticated.



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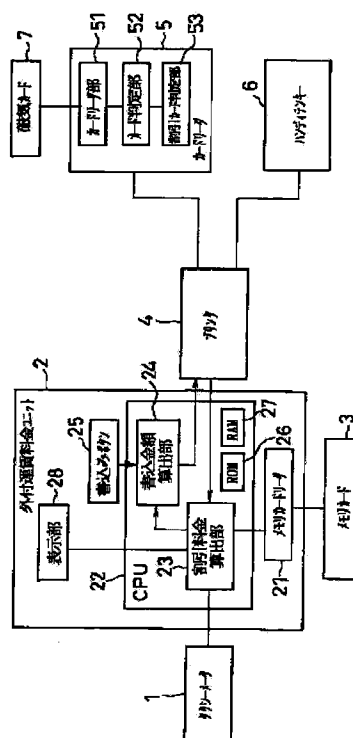
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(54) 【発明の名称】 タクシー料金割引装置

(57) 【要約】

【課題】 特定者に対してタクシー料金を自動的に割引してボタン等による割引操作をなくすとともに特定者に対するタクシー料金の正確な割引を行なう。

【解決手段】 タクシーメータ1がタクシーの走行距離及び走行時間に基づいてタクシー料金を算出し、磁気カード7に記憶された磁気データ及び割引情報をカードリーダー5で読み取り、カード判定部52が読み取られた磁気データと予めメモリに記憶された使用可能なカードに関する情報とを照合して磁気カードの取引認証の判定を行ない、磁気カードの取引が認証された場合には、割引料金算出部23が、割引情報とタクシーメータで算出されたタクシー料金とに基づいてタクシーの割引料金を算出する。



【特許請求の範囲】

【請求項1】 タクシーの走行距離及び走行時間に基づいてタクシー料金を算出する料金算出部と、信用取引データを記憶すると共に特定者に対してタクシー料金を割引することを示すための割引情報を記憶した取引カードと、

この取引カードに記憶された信用取引データ及び前記割引情報を読み取るカード読取部と、

このカード読取部により読み取られた信用取引データと予めメモリに記憶された使用可能なカードに関する情報とを照合して前記取引カードの取引認証の判定を行なうカード判定部と、

このカード判定部により前記取引カードの取引が認証された場合に前記カード読取部で読み取られた割引情報と前記料金算出部で算出されたタクシー料金とに基づいてタクシーの割引料金を算出する割引料金算出部と、を備えることを特徴とするタクシー料金割引装置。

【請求項2】 前記取引カードには前記割引情報として、前記特定者に対する料金割引の種別を示すための割引種別情報、料金の割引率を示すための割引率情報及び現金またはプリペイドまたはポストペイドの決済種別情報が少なくとも記憶されていることを特徴とする請求項1記載のタクシー料金割引装置。

【請求項3】 前記取引カードには前記割引情報として前記特定者に対する料金割引の種別を示すための割引種別情報が記憶され、

さらに、前記取引カードに記憶された割引種別情報に対応して料金の割引率を示すための割引率情報を記憶した割引率テーブルを設けたことを特徴とする請求項1記載のタクシー料金割引装置。

【請求項4】 前記取引カードには前記信用取引データとして金額が記憶され、

さらに、前記割引料金算出部で算出された割引料金が前記取引カードに記憶された金額以下であるか否かを判断し割引料金が前記金額以下である場合に前記金額から前記割引料金を差し引いた差額を前記取引カードへの書込金額として算出する書込金額算出部を備えることを特徴とする請求項1または請求項2または請求項3記載のタクシー料金割引装置。

【発明の詳細な説明】**【0001】**

【発明の属する技術分野】 本発明は、カードを用いてタクシーの乗車料金を支払う際に乗客が高齢者や身障者などの特定者である場合に乗車料金の割引を行なうタクシー料金割引装置に関する。

【0002】

【従来の技術】 従来よりタクシー車両には、磁気カード等を用いてタクシーの乗車料金の決済を行なうタクシー料金装置が搭載される。従来のこの種のタクシー料金装置としては、例えば、特公平6-75273号公報に記

載されたタクシーのカード化システムが知られている。

【0003】 この公報に記載されたタクシーのカード化システムにおいては、カードリードライタに運転者カードがセットされると、運転者カードに記憶された料金演算に必要なとされる基準データ等がカードリードライタにより読み取られ、その基準データがマイクロコンピュータに入力される。そして、乗客が乗車した場合には乗車地データ及び乗車時刻データが日報データとしてメモリに記憶される。

【0004】 次に、タクシー料金の演算が開始され、走行距離データ及び時刻データに基づいて初乗り料金の終了及び走行距離当たりの料金加算並びに時間当たりの料金加算等が演算され、降車地データが入力されるまで、演算されたタクシー料金が表示装置に表示される。そして、乗客が目的地に到達して降車した場合には、降車地データが入力され、タクシー料金の演算が停止され、タクシー料金がメモリに記憶される。

【0005】 さらに、プリペイド（前払い）カードなどの乗客カードの内容をカードリードライタで読み取り、その乗客カードが所定のカードかどうかの判別を行ない、その乗客カードが所定のカードであれば、メモリに記憶されたタクシー料金を乗客カードによって決済することができる。

【0006】 一方、高齢者による高齢者カードの提示または身障者による身障者カードの提示があった場合には、外付運賃料金ユニットに設けられた高齢者割引ボタンまたは身障者割引ボタンを押す。

【0007】 すると、外付運賃料金ユニットが割引ボタンからの割引信号によってタクシー料金の割引を行なう。そして、カードリーダにより身障者カードまたは高齢者カードが読み取られ、外付運賃料金ユニットに表示された外付表示料金が決済される。

【0008】

【発明が解決しようとする課題】 しかしながら、運転者は高齢者割引ボタンまたは身障者割引ボタンを押すための割引操作を行なう必要があり、その操作が面倒であった。また、乗客が高齢者または身障者であるにもかかわらず、運転者が高齢者ボタンまたは身障者ボタンを押し忘れる場合もある。このような場合には、乗客が高齢者または身障者であるにもかかわらず、通常の料金で処理してしまうことになる。

【0009】 また、高齢者ボタンを押すべきところを身障者ボタンを押すようなボタンの押し誤り等の誤操作をしてしまう場合もあった。このため、高齢者や身障者などの特定者に対するタクシー料金の正確な割引を行なえないという問題があった。

【0010】 本発明は、高齢者や身障者等の特定者に対してタクシー料金を自動的に割引することによりボタン等による割引操作をなくするとともに特定者に対するタクシー料金の正確な割引を行なうことのできるタクシー料

金割引装置を提供することを課題とする。

【0011】

【課題を解決するための手段】本発明は前記課題を解決するために以下の手段を採用した。請求項1の発明は、タクシーの走行距離及び走行時間に基づいてタクシー料金を算出する料金算出部と、信用取引データを記憶すると共に特定者に対してタクシー料金を割引することを示すための割引情報を記憶した取引カードと、この取引カードに記憶された信用取引データ及び前記割引情報を読み取るカード読取部と、このカード読取部により読み取られた信用取引データと予めメモリに記憶された使用可能なカードに関する情報とを照合して前記取引カードの取引認証の判定を行なうカード判定部と、このカード判定部により前記取引カードの取引が認証された場合に前記カード読取部で読み取られた割引情報と前記料金算出部で算出されたタクシー料金とに基づいてタクシーの割引料金を算出する割引料金算出部とを備えることを特徴とする。

【0012】この発明によれば、料金算出部がタクシーの走行距離及び走行時間に基づいてタクシー料金を算出して、取引カードに記憶された信用取引データ及び割引情報をカード読取部で読み取り、カード判定部が読み取られた信用取引データと予めメモリに記憶された使用可能なカードに関する情報とを照合して取引カードの取引認証の判定を行ない、取引カードの取引が認証された場合には、割引料金算出部が、割引情報と料金算出部で算出されたタクシー料金とに基づいてタクシーの割引料金を算出する。

【0013】すなわち、特定者に対してタクシー料金を自動的に割引することによりボタン等による割引操作をなくすとともに特定者に対するタクシー料金の正確な割引を行なうことができる。

【0014】請求項2の発明のように、前記取引カードには前記割引情報として、前記特定者に対する料金割引の種別を示すための割引種別情報、料金の割引率を示すための割引率情報及び現金またはプリペイドまたはポストペイドの決済種別情報が少なくとも記憶されていることを特徴とする。

【0015】この発明によれば、取引カードに記憶された割引種別情報、割引率情報及び決済種別情報をカード読取部で読み取るだけで各種別に応じた決済情報が自動収集できる。

【0016】請求項3の発明のように、前記取引カードには前記割引情報として前記特定者に対する料金割引の種別を示すための割引種別情報が記憶され、さらに、前記取引カードに記憶された割引種別情報に対応して料金の割引率を示すための割引率情報を記憶した割引率テーブルを設けてもよい。

【0017】請求項4の発明は、前記取引カードには前記信用取引データとして金額が記憶され、さらに、前記

割引料金算出部で算出された割引料金が前記取引カードに記憶された金額以下であるか否かを判断し割引料金が前記金額以下である場合に前記金額から前記割引料金を差し引いた差額を前記取引カードへの書込金額として算出する書込金額算出部を備えてもよい。

【0018】

【発明の実施の形態】以下、本発明のタクシー料金割引装置の実施の形態を図面を参照して詳細に説明する。図1にタクシー料金割引装置の実施の形態の構成ブロック図を示す。図1に示すタクシー料金割引装置は、タクシーメータ1、外付運賃料金ユニット2、メモリカード3、プリンタ4、カードリーダー5、ハンディテンキー6、磁気カード7を有して構成される。外付運賃料金ユニット2は、メモリカードリーダー21、中央処理装置（以下、CPUと称する。）22、書込ボタン25、表示部28を有する。

【0019】メモリカード3は、料金演算に必要とされる基準データや運転者データ等を記憶する。料金演算に必要とされる基準データは、例えば、初乗り料金及び走行距離当たりの加算料金並びに時間当たりの加算料金などである。

【0020】メモリカードリーダー21は、メモリカード3から基準データ等を読み取りCPU22を介してタクシーメータ1に送出する。メモリカードリーダー21は、タクシーメータ1からのCPU22を介する運転日報データをメモリカード3に書き込む。この運転日報データとしては、例えば、乗車地、乗車時刻、降車地、降車時刻及び料金などである。

【0021】タクシーメータ1は、料金算出部を構成し、メモリカード3から基準データとタクシー車両の走行距離及び走行時間の情報とに基づきタクシー料金を算出する。外付運賃料金ユニット2は、タクシーメータ1からのタクシー料金情報とプリンタ4を介してカードリーダー5から出力されてくる磁気データに基づいてタクシー料金の決済処理を行なう。

【0022】CPU22は、各部を制御するもので、割引料金算出部23、書込金額算出部24、リードオンリーメモリ（ROM）26、ランダムアクセスメモリ（RAM）27を有する。CPU22は、タクシーメータ1からのタクシー料金を表示部28に表示させる。

【0023】割引料金算出部23は、タクシーメータ1からのタクシー料金情報とプリンタ4を介するカードリーダー5からの後述する割引情報とに基づき割引料金を算出する。また、書込ボタン25がオンされた時、決済情報等の運転者データをメモリカードリーダー21に出力する。表示部28は、割引料金算出部23で算出された割引料金を表示する。

【0024】書込金額算出部24は、割引料金算出部23により算出された割引料金が磁気カード7に記憶された取引限度額以下であるかどうかを判断し、割引料金が

取引限度額以下である場合に取引限度額から割引料金を差し引いた差額を書込金額として算出する。書込金額算出部24は、前記書込金額をプリンタ4を介してカードリーダー5に出力する。カードリーダー51は、その書込金額を取引カードとしての磁気カード7に書き込む。

【0025】図2にプリンタ4の詳細な構成ブロック図を示す。図2に示すプリンタ4は、カードリーダー5からのデータまたはハンディテンキー6からのデータをプリントするプリンタユニット部41、外付運賃料金ユニット2との入出力を司る外付インターフェイス部（以下、外付I/F部と称する。）42、ハンディテンキー6との入出力を司るハンディテンキーインターフェイス部（以下、ハンディテンキーI/F部と称する。）43、カードリーダー5との入出力を司るカードリーダーインターフェイス部（以下、カードリーダーI/F部と称する。）44、ROM46及びRAM47を有し各部を制御するCPU45、CPU45に電力を供給する電源48、データのプリント操作を行なう操作部49から構成される。

【0026】図1及び図3にカードリーダー5の詳細な構成ブロック図を示す。図1に示すようにカードリーダー5は、磁気カード7に記憶された磁気データを読み取るカードリーダー部51、カード判定部52、割引カード判定部53を有する。

【0027】カード判定部52は、カードリーダー部51で読み取られた磁気カード7の磁気データとROMに予め記憶された使用可能なカードに関する情報とを照合して磁気カード7の取引認証の判定を行なう。

【0028】なお、使用可能なカードに関する情報は、カードリーダー5に設けられたEEPROM（図示せず）に記憶するとよい。このEEPROMは、記憶された情報を電気的に消去して新たなプログラムを記憶する読み出し専用メモリである。磁気カード7の磁気データには、ポストペイド（後払い）形式のカードであれば、磁気カード7であることを示すIDコード、カード所有者の暗証番号、カードの有効期限等のデータが記憶される。

【0029】割引カード判定部53は、身障者または高齢者に対してタクシー料金を割引することを示すための割引情報が磁気カード7の磁気データに含まれるか否かによって磁気カード7が割引カードであるかどうかを判定する。割引カード判定部53は、磁気カード7が割引カードである場合には、磁気カード7に記憶された割引情報をプリンタ4を介して外付運賃料金ユニット2に出力する。

【0030】磁気カード7には、図4に示すように、割引情報として、高齢者または身障者等の料金割引の種別を示すための割引種別情報、高齢者または身障者等に対する料金の割引率を示すための割引率情報、現金またはプリペイドまたはポストペイド等の料金の決済の種別を

示すための決済種別情報が記憶されている。

【0031】割引種別情報が例えば、“10H”であれば、割引カードが身障者メンバーズカードであることを示し、割引種別情報が例えば、“11H”であれば、割引カードが高齢者メンバーズカードであることを示す。割引率情報としては、例えば、10%、20%などの数値が記憶される。

【0032】さらに、カードリーダー5は、図3に示すように、カードリーダー部51、プリンタ4との入出力を司るプリンタインターフェイス部（以下、プリンタI/F部と称する。）54、ROM56及びRAM57を有するCPU55、電源58、発光ダイオード部（以下、LED部と称する。）59から構成される。CPU55は、カード判定部52により磁気カード7の認証がなされたとき、取引がOKである旨をLED部59に出力する。

【0033】図5にハンディテンキー6の詳細な構成ブロック図を示す。図5に示すハンディテンキー6は、テンキーデータを表示する表示部61、プリンタ4との入出力を司るプリンタインターフェイス部（以下、プリンタI/F部と称する。）62、暗証番号などのテンキーデータを入力するテンキー部63、ROM65及びRAM66を有し各部を制御するCPU64、CPU64に電力を供給する電源67から構成される。CPU64は、テンキー部63から入力された暗証番号とROM65に記憶された正規の暗証番号との照合を行ない、暗証番号が一致した場合にはポストペイド形式の磁気カード7の取引をOKとする。

【0034】次に、このように構成されたタクシー料金割引装置の動作を図6乃至図8の図面を参照することにより説明する。まず、メモリカードリーダー21にメモリカード3がセットされると、メモリカード3に記憶された料金演算に必要とされる基準データ等がメモリカードリーダー21により読み取られ、その基準データがCPU22を介してタクシーメータ1に入力される。

【0035】次に、タクシーメータ1によりタクシー料金の演算が開始され、走行距離データ及び時刻データに基づいて初乗り料金の終了及び走行距離当たりの料金加算並びに時間当たりの料金加算等が演算される。運走が図8(a)に示すように例えば“1000”となる。そして、支払タリフ信号が入力されるまで、演算されたタクシー料金がタクシーメータ1から外付運賃料金ユニット2に入力され、表示部28の画面71に表示される。

【0036】さらに、乗客が目的地に到達した場合には、支払タリフ信号が入力され、タクシー料金の演算が停止され、図8(b)に示すように、タクシー料金の支払い合計が表示部28の画面71に表示される。

【0037】次に、図6のフローチャートを参照してカードリーダー5の処理を説明する。まず、図8(c)に示すように、例えば、身障者カードからなる磁気カード7

をカードリーダー5に通す。すると、カードリーダー5により、磁気カード7の磁気データが読み取られたかどうかを判定する(ステップS11)。

【0038】磁気カード7の磁気データが読み取られた場合には、カード判定部52は、カードリーダー51で読み取られた磁気カード7の磁気データと使用可能なカードに関する情報とを照合して、磁気カード7の取引認証がOKかどうかを判定する(ステップS13)。ここで、取引がOKであれば、その旨をLED部59の例えば緑発光ダイオード(図示せず)の点灯により表示し、取引がNGであれば、その旨をLED部59の例えば赤発光ダイオード(図示せず)の点灯により表示してもよい。

【0039】磁気カード7の取引認証がOKである場合には、割引判定部53は、図4に示すような割引情報が磁気カード7の磁気データに含まれるか否かによって磁気カード7が割引カードであるかどうかを判定する(ステップS15)。身障者であれば、磁気カード7の割引種別情報に“10H”が記憶されているので、その磁気カード7が身障者メンバーズカードであることがわかる。

【0040】磁気カード7が身障者カード等の割引カードである場合には、割引カード判定部53は、磁気カード7に記憶された割引情報をプリンタ4を介して外付運賃料金ユニット2に出力する(ステップS17)。なお、磁気カード7が割引カードでない場合には、その磁気カードはタクシー料金の割引をしない通常のカードとして処理される(ステップS19)。

【0041】次に、図7のフローチャートを参照して外付運賃料金ユニット2の処理を説明する。外付け運賃料金ユニット2は、カードリーダー5から割引情報を受信したかどうかを判定し(ステップS31)、割引情報を受信した場合には、割引料金算出部23は、タクシーメータ1からのタクシー料金情報とプリンタ4を介するカードリーダー5からの割引情報とに基づき割引料金を算出する。

【0042】表示部28は、割引料金算出部23で算出された割引料金を表示する(ステップS33)。身障者に対する割引率が10%であれば、図8(c)に示すように表示部28の画面71にタクシー料金が“900”と表示される。

【0043】磁気カード7がプリペイドカードであれば、書込金額算出部24は、割引料金算出部23により算出された割引料金が磁気カード7に記憶された取引限度額以下であるかどうかを判断し、割引料金が取引限度額以下である場合に取引限度額から割引料金を差し引いた差額を書込金額として算出する。すなわち、決済情報が作成され、プリンタ4を介してカードリーダー5に出力する。カードリーダー51は、その決済情報を磁気カード7に書き込む(ステップS35)。

【0044】さらに、書込ボタン25がオンされたかどうかが判定され(ステップS37)、書込ボタン25がオンされたとき、割引料金算出部23は、決済情報をメモリカード3に書き込む(ステップS39)。

【0045】このように、実施の形態によれば、高齢者割引ボタンまたは身障者割引ボタンを押すことなく、割引情報を記憶した磁気カード7を読み取ることで、自動的にタクシー料金が割引されるため、ボタンの押し忘れやボタンの押し誤り等の誤操作及び誤り情報の収集がなくなる。

【0046】すなわち、高齢者や身障者等の特定者に対してタクシー料金を自動的に割引することによりボタン等による割引操作をなくするとともに特定者に対するタクシー料金の正確な割引を行なうことができる。

【0047】また、磁気カード7には高齢者または身障者等の割引種別情報、割引率情報、決済種別情報が記憶されているため、これらの情報を読み取るだけで各種別に応じた決済情報が自動的に収集できる。さらに、実施の形態では、タクシー料金をプリペイド形式の磁気カード7で決済したが、タクシー料金は、磁気カード7に記憶された決済種別情報を参照することにより、現金、ポストペイド、プリペイドのいずれでも決済することができる。

【0048】なお、本発明は実施の形態に限定されるものではない。実施の形態では、外付運賃料金ユニット2にのみ表示部28を設けるようにしたが、例えば、外付運賃料金ユニット2及びカードリーダー5に表示部28を設けてもよい。この場合には、外付運賃料金ユニット2の表示部28に割引前のタクシー料金を表示し、カードリーダー5の表示部28に割引後のタクシー料金を表示してもよい。また、プリンタ4、ハンディテンキー6に表示部28を設け、割引後のタクシー料金を表示しても良い。また、実施の形態では磁気カード7を用いたが、磁気カード7の代わりに集積回路(IC)カードを用いても良い。

【0049】さらに、実施の形態では、割引率情報を磁気カード7に記憶したが、この割引率情報は、例えば、外付運賃料金ユニット2、プリンタ4、カードリーダー5のいずれかに記憶するようにしてもよい。

【0050】すなわち、磁気カード7に割引情報として、割引種別情報、決済種別情報のみを記憶し、この割引種別情報に対応する割引率情報を記憶した割引率テーブルを、例えば、外付運賃料金ユニット2、プリンタ4、カードリーダー5のいずれかに設ける。そして、割引率テーブルを参照することで磁気カード7に記憶された割引種別情報に対応する割引率情報を読み出すことで、タクシー料金の割引を行なうことができる。

【0051】

【発明の効果】本発明によれば、料金算出部がタクシーの走行距離及び走行時間に基づいてタクシー料金を算出

して、取引カードに記憶された信用取引データ及び割引情報をカード読取部で読み取り、カード判定部が読み取られた信用取引データと予めメモリに記憶された使用可能なカードに関する情報とを照合して取引カードの取引認証の判定を行ない、取引カードの取引が認証された場合には、割引料金算出部が、割引情報と料金算出部で算出されたタクシー料金とに基づいてタクシーの割引料金を算出する。

【0052】すなわち、特定者に対してタクシー料金を自動的に割引することによりボタン等による割引操作をなくすとともに特定者に対するタクシー料金の正確な割引を行なうことができる。

【0053】また、取引カードに記憶された割引種別情報、割引率情報及び決済種別情報をカード読取部で読み取るだけで各種別に応じた決済情報が自動収集できる。

【図面の簡単な説明】

【図1】本発明のタクシー料金割引装置の実施の形態を示す構成ブロック図である。

【図2】プリンタの詳細を示す構成ブロック図である。

【図3】カードリーダーの詳細を示す構成ブロック図である。

【図4】カードデータのデータフォーマットを示す図である。

【図5】ハンディテンキーの詳細を示す構成ブロック図

である。

【図6】カードリーダーの処理を示すフローチャートである。

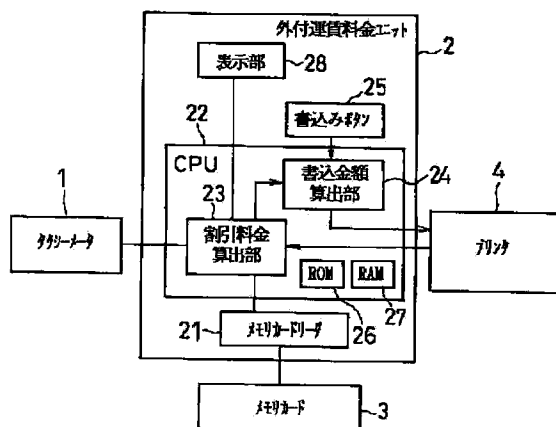
【図7】外付運賃料金ユニットの処理を示すフローチャートである。

【図8】外付運賃料金の自動的な割引処理を説明するための図である。

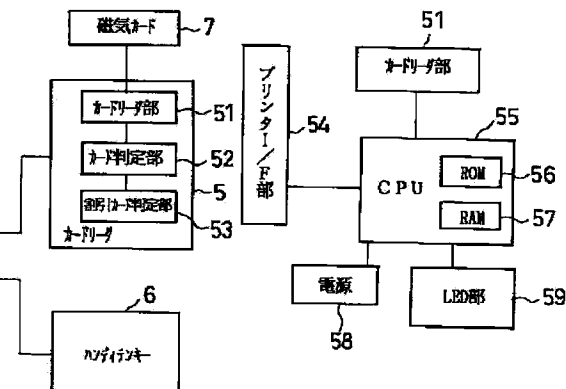
【符号の説明】

- 1 タクシーメータ
- 2 外付運賃料金ユニット
- 3 メモリカード
- 4 プリンタ
- 5 カードリーダー
- 6 ハンディテンキー
- 7 磁気カード
- 21 メモリカードリーダー
- 23 割引料金算出部
- 24 書込金額算出部
- 25 書込ボタン
- 28 表示部
- 51 カードリーダー部
- 52 カード判定部
- 53 割引カード判定部

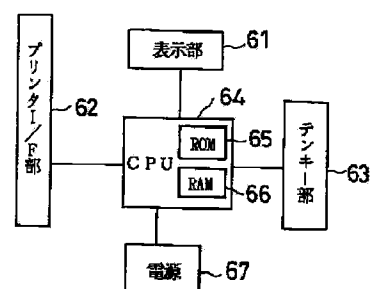
【図1】



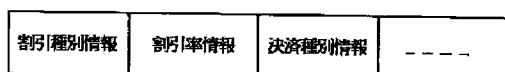
【図3】



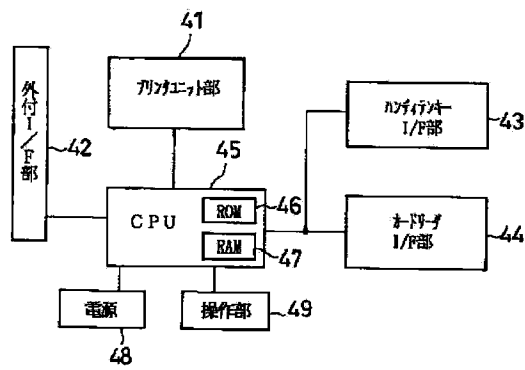
【図5】



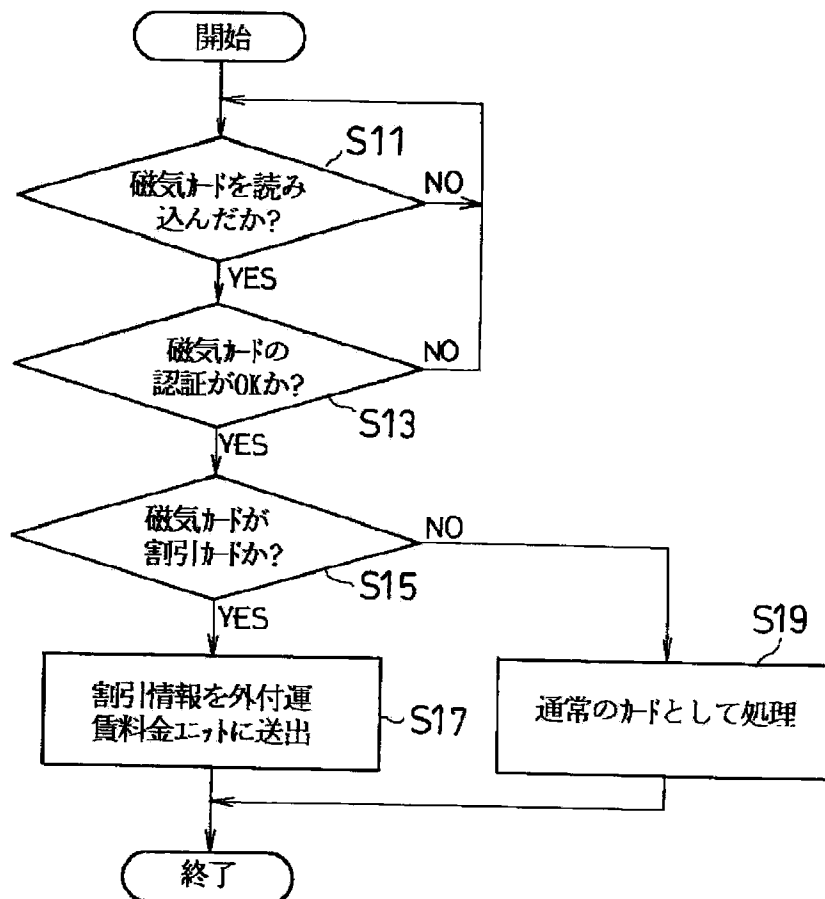
【図4】



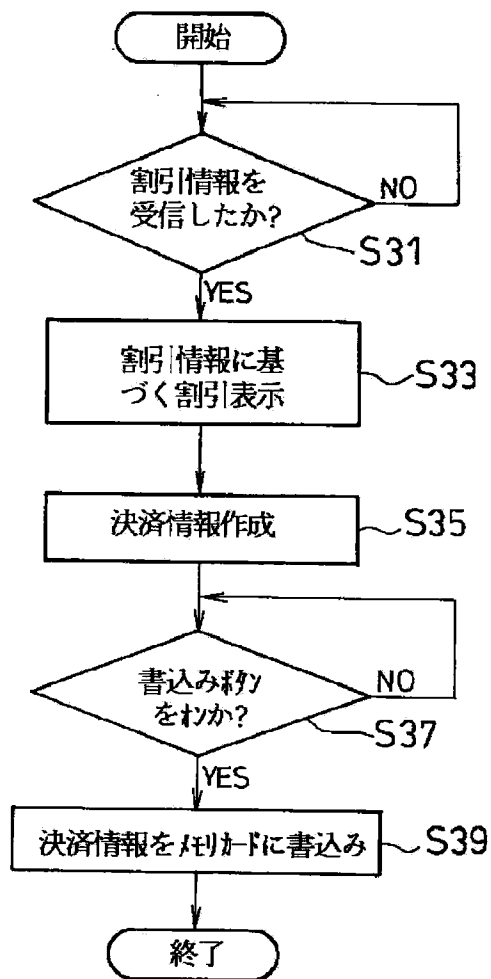
【図2】



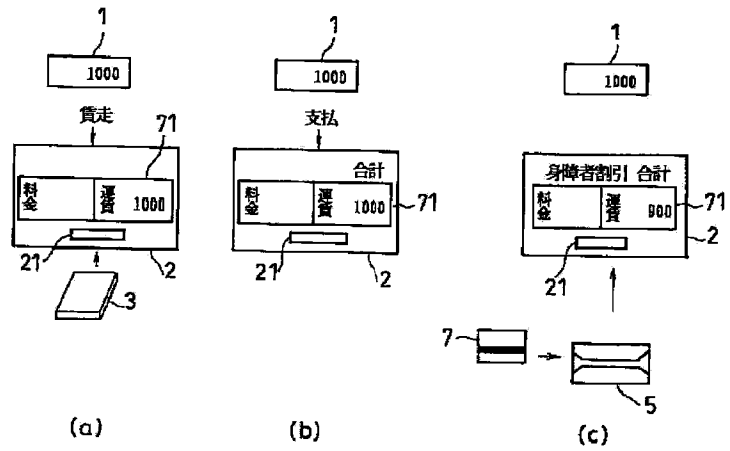
【図6】



【図7】



【図8】



JP H10- 255086 A**CLAIMS**

[Claim(s)]

[Claim 1] The tariff calculation section which computes the taxi fare based on the mileage and the transit time of a taxi, The transaction card which memorized discount information to show discounting the taxi fare to a specific person while memorizing margin transaction data, The card read station which reads the margin transaction data memorized by this transaction card and said discount information, The card judging section which collates the information about the usable card beforehand remembered to be margin transaction data read by this card read station by memory, and judges dealings authentication of said transaction card, The discount rate calculation section which computes the discount rate of a taxi based on the discount information read by said card read station when dealings of said transaction cards were attested by this card judging section, and the taxi fare computed in said tariff calculation section, Taxi fare discount equipment characterized by preparation *****.

[Claim 2] Taxi fare discount equipment according to claim 1 characterized by memorizing the settlement-of-accounts classification information on discount rate information showing the discount rate of discount classification information to show the classification of tariff discount to said specific person in said transaction card as said discount information, and a tariff and cash, prepaid one, or postPEIDO at least.

[Claim 3] Taxi fare discount equipment according to claim 1 characterized by preparing the discount rate table which discount classification information to show the classification of tariff discount to said specific person in said transaction card as said discount information was memorized, and memorized discount rate information to show the discount rate of a tariff corresponding to the discount classification information further memorized by said transaction card.

[Claim 4] The amount of money is memorized by said transaction card as said margin transaction data. Further The difference which judged whether it was below the amount of money the discount rate computed in said discount rate calculation section was remembered to be by said transaction card, and deducted said discount rate from said amount of money when a discount rate was said below amount of money as the write-in amount of money to said transaction card Taxi fare discount equipment according to claim 1, 2, or 3 characterized by having the write-in amount-of-money calculation section to compute.

DETAILED DESCRIPTION

[Detailed Description of the Invention]**[0001]**

[Field of the Invention] This invention relates to the taxi fare discount equipment which discounts an entrainment tariff, when PAX is specific persons, such as elderly people and the handicapped, in case the entrainment tariff of a taxi is paid using a card.

[0002]

[Description of the Prior Art] The taxi fare equipment which settles the entrainment tariff of a taxi using a magnetic card etc. is conventionally carried in a taxi car. As this conventional kind of taxi fare equipment, the card-ized system of the taxi indicated by JP,6-75273,B is known, for

example.

[0003] In the card-ized system of the taxi indicated by this official report, if an operator card is set to a card lead writer, the criteria data needed for the tariff operation memorized by the operator card will be read by the card lead writer, and that criteria data will be inputted into a microcomputer. And when the PAX gets on, entrainment ground data and entrainment time-of-day data are memorized by memory as daily report data.

[0004] Next, the calculated taxi fare is displayed on a display until the operation of the taxi fare is started, the tariff addition per time amount etc. calculates in termination of the starting fare, and the tariff addition list per mileage based on mileage data and time-of-day data and alighting ground data are inputted. And when the PAX arrives at the destination and gets off, alighting ground data are inputted, the operation of the taxi fare is suspended, and the taxi fare is memorized by memory.

[0005] Furthermore, the contents of the PAX cards, such as a prepaid (prepayment) card, are read by the card lead writer, the PAX card distinguishes that it is a predetermined card, and if the PAX card is a predetermined card, the taxi fare memorized by memory can be settled with a PAX card.

[0006] On the other hand, when there is presentation of the elderly-people card by elderly people or presentation of the handicapped card by the handicapped, the elderly-people discount carbon button or handicapped discount carbon button prepared in the freight tariff unit with outside is pushed.

[0007] Then, a freight tariff unit with outside discounts the taxi fare with the discount signal from a discount carbon button. And a handicapped card or an elderly-people card is read by the card reader, and the display tariff with outside displayed on the freight tariff unit with outside is settled.

[0008]

[Problem(s) to be Solved by the Invention] However, the operator needed to perform discount actuation for pushing an elderly-people discount carbon button or a handicapped discount carbon button, and the actuation was troublesome. Moreover, although the PAX is elderly people or the handicapped, an operator may forget to push an elderly-people carbon button or a handicapped carbon button. In such a case, although the PAX is elderly people or the handicapped, it will process at the usual tariff.

[0009] Moreover, also when operation mistakes, such as a push error of a carbon button which pushes a handicapped carbon button for the place which should push an elderly-people carbon button, were carried out, it was. For this reason, there was a problem that exact discount of the taxi fare to specific persons, such as elderly people and the handicapped, could not be performed.

[0010] This invention makes it a technical problem to offer the taxi fare discount equipment which can perform exact discount of the taxi fare to a specific person while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to specific persons, such as elderly people and the handicapped.

[0011]

[Means for Solving the Problem] This invention adopted the following means, in order to solve said technical problem. The tariff calculation section in which invention of claim 1 computes the taxi fare based on the mileage and the transit time of a taxi, The transaction card which memorized discount information to show discounting the taxi fare to a specific person while memorizing margin transaction data, The card read station which reads the margin transaction data memorized by this transaction card and said discount information, The card judging section

which collates the information about the usable card beforehand remembered to be margin transaction data read by this card read station by memory, and judges dealings authentication of said transaction card, When dealings of said transaction cards are attested by this card judging section, it is characterized by having the discount rate calculation section which computes the discount rate of a taxi based on the discount information read by said card read station, and the taxi fare computed in said tariff calculation section.

[0012] According to this invention, the tariff calculation section computes the taxi fare based on the mileage and the transit time of a taxi. The margin transaction data and discount information which were memorized by the transaction card are read by the card read station. Collate the information about the usable card beforehand remembered to be margin transaction data with which the card judging section was read by memory, and dealings authentication of a transaction card is judged. When dealings of transaction cards are attested, the discount rate calculation section computes the discount rate of a taxi based on discount information and the taxi fare computed in the tariff calculation section.

[0013] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to a specific person, exact discount of the taxi fare to a specific person can be performed.

[0014] Like invention of claim 2, it is characterized by memorizing the settlement-of-accounts classification information on discount rate information showing the discount rate of discount classification information to show the classification of tariff discount to said specific person as said discount information, and a tariff and cash, prepaid one, or postPEIDO at least at said transaction card.

[0015] According to this invention, the automatic collection of the settlement-of-accounts information according to various exceptions can be carried out only by reading the discount classification information, discount rate information, and settlement-of-accounts classification information which were memorized by the transaction card by the card read station.

[0016] Discount classification information to show the classification of tariff discount to said specific person in said transaction card as said discount information is memorized like invention of claim 3, and the discount rate table which memorized discount rate information to show the discount rate of a tariff corresponding to the discount classification information memorized by said transaction card may be prepared further.

[0017] Invention of claim 4 may be equipped with the write-in amount-of-money calculation section which computes the difference which judged whether it was below the amount of money the amount of money was remembered to be by said transaction card as said margin transaction data, and the discount rate computed in said discount rate calculation section was further remembered to be by said transaction card, and deducted said discount rate from said amount of money when a discount rate was said below amount of money as the write-in amount of money to said transaction card.

[0018]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the taxi fare discount equipment of this invention is explained to a detail with reference to a drawing. The configuration block Fig. of the gestalt of operation of taxi fare discount equipment is shown in drawing 1. The taxi fare discount equipment shown in drawing 1 has a taximeter 1, the freight tariff unit 2 with outside, a memory card 3, a printer 4, a card reader 5, the handicap ten key 6, and a magnetic card 7, and is constituted. The freight tariff unit 2 with outside has the memory card reader 21, a central processing unit (CPU is called hereafter.) 22, the write-in carbon button

25, and a display 28.

[0019] A memory card 3 memorizes criteria data, operator data, etc. which are needed for a tariff operation. The criteria data needed for a tariff operation are an addition tariff per time amount etc. at the starting fare and the addition tariff list per mileage.

[0020] The memory card reader 21 reads criteria data etc. in a memory card 3, and sends them out to a taximeter 1 through CPU22. The memory card reader 21 writes the operation daily report data through CPU22 from a taximeter 1 in a memory card 3. As this operation daily report data, they are the entrainment ground, entrainment time of day, the alighting ground, alighting time of day, a tariff, etc., for example.

[0021] A taximeter 1 constitutes the tariff calculation section and computes the taxi fare based on the mileage of criteria data and a taxi car, and the information on the transit time from a memory card 3. The freight tariff unit 2 with outside performs settlement-of-accounts processing of the taxi fare based on the magnetic data outputted from a card reader 5 through the taxi fare information and the printer 4 from a taximeter 1.

[0022] CPU22 controls each part and has the discount rate calculation section 23, the write-in amount-of-money calculation section 24, a read only memory (ROM) 26, and random access memory (RAM) 27. CPU22 displays the taxi fare from a taximeter 1 on a display 28.

[0023] The discount rate calculation section 23 computes a discount rate based on the taxi fare information from a taximeter 1, and the discount information later mentioned from the card reader 5 through a printer 4. Moreover, when the write-in carbon button 25 is turned on, operator data, such as settlement-of-accounts information, are outputted to the memory card reader 21. A display 28 displays the discount rate computed in the discount rate calculation section 23.

[0024] The write-in amount-of-money calculation section 24 judges whether it is below the dealings limit the discount rate computed by the discount rate calculation section 23 was remembered to be by the magnetic card 7, and when a discount rate is below a dealings limit, it computes the difference which deducted the discount rate from the dealings limit as the write-in amount of money. The write-in amount-of-money calculation section 24 outputs said write-in amount of money to a card reader 5 through a printer 4. The card reader section 51 writes the write-in amount of money in the magnetic card 7 as a transaction card.

[0025] The detailed configuration block Fig. of a printer 4 is shown in drawing 2. The interface section with outside which manages I/O with the printer unit section 41 on which the printer 4 shown in drawing 2 prints the data from a card reader 5, or the data from the handicap ten key 6, and the freight tariff unit 2 with outside (The I/F section with outside is called hereafter.) 42, the handicap ten key interface section which manages I/O with the handicap ten key 6 (the handicap ten key I/F section is called hereafter.) 43, the card reader interface section which manages I/O with a card reader 5 (the card reader I/F section is called hereafter.) It consists of a power source 48 which supplies power to 44, and CPU45 and CPU45 which have ROM46 and RAM47 and control each part, and a control unit 49 which performs print actuation of data.

[0026] The detailed configuration block Fig. of a card reader 5 is shown in drawing 1 and drawing 3. As shown in drawing 1, a card reader 5 has the card reader section 51 which reads the magnetic data memorized by the magnetic card 7, the card judging section 52, and the discount card judging section 53.

[0027] The card judging section 52 collates the information about the usable card memorized beforehand with the magnetic data and ROM of the magnetic card 7 read in the card reader section 51, and judges dealings authentication of a magnetic card 7.

[0028] In addition, the information about an usable card is good to memorize to EEPROM (not

shown) prepared in the card reader 5. This EEPROM is a read-only memory which eliminates the memorized information electrically and memorizes a new program. Data, such as a personal identification number of the ID code and cardholder who show that it is a magnetic card 7 to the magnetic data of a magnetic card 7 if it is the card of a postPEIDO (deferred payment) format, and an expiration date of a card, are memorized.

[0029] The discount card judging section 53 judges whether a magnetic card 7 is a discount card by whether discount information to show discounting the taxi fare to the handicapped or elderly people is included in the magnetic data of a magnetic card 7. The discount card judging section 53 outputs the discount information memorized by the magnetic card 7 to the freight tariff unit 2 with outside through a printer 4, when a magnetic card 7 is a discount card.

[0030] As shown in a magnetic card 7 at drawing 4, settlement-of-accounts classification information to show the classification of settlement of accounts of tariffs, such as discount rate information to show the discount rate of the tariff to discount classification information, elderly people, or the handicapped to show the classification of tariff discount, such as elderly people or the handicapped, as discount information etc., cash, prepaid ones, or postPEIDO, is memorized.

[0031] It is shown that a discount card is a handicapped member's card if discount classification information is "10 H", and if discount classification information is "11 H", it is shown that a discount card is an elderly-people member's card. As discount rate information, numeric values, such as 10% and 20 etc.%, are memorized, for example.

[0032] Furthermore, a card reader 5 consists of the card reader section 51, the printer interface section (the printer I/F section is called hereafter.) 54 which manages I/O with a printer 4, CPU55 which has ROM56 and RAM57, a power source 58, and the light emitting diode section (the LED section is called hereafter.) 59, as shown in drawing 3. CPU55 outputs the purport whose dealings are O.K. to the LED section 59, when authentication of a magnetic card 7 is made by the card judging section 52.

[0033] The detailed configuration block Fig. of the handicap ten key 6 is shown in drawing 5. The handicap ten key 6 shown in drawing 5 consists of the ten key section 63 which inputs ten key data, such as the display 61 which displays ten key data, the printer interface section (the printer I/F section is called hereafter.) 62 which manages I/O with a printer 4, and a personal identification number, and a power source 67 which supplies power to CPU64 and CPU64 which have ROM65 and RAM66 and control each part. CPU64 performs collating with the personal identification number of the normal memorized by the personal identification number inputted from the ten key section 63, and ROM65, and when a personal identification number is in agreement, it conducts dealings of the magnetic card 7 of a postPEIDO format to O.K.

[0034] Next, by referring to the drawing of drawing 6 thru/or drawing 8 explains actuation of the taxi fare discount equipment constituted in this way. First, if a memory card 3 is set to the memory card reader 21, the criteria data needed for the tariff operation memorized by the memory card 3 will be read by the memory card reader 21, and the criteria data will be inputted into a taximeter 1 through CPU22.

[0035] Next, the operation of the taxi fare is started by the taximeter 1 and the tariff addition per time amount etc. calculates in termination of the starting fare, and the tariff addition list per mileage based on mileage data and time-of-day data. A metaphor is set to "1000" as **** shows drawing 8 (a). And the calculated taxi fare is inputted into the freight tariff unit 2 with outside from a taximeter 1, and is displayed on Screen 71 of a display 28 until a payment tariff signal is inputted.

[0036] Furthermore, when the PAX arrives at the destination, as a payment tariff signal is

inputted, the operation of the taxi fare is suspended and it is shown in drawing 8 (b), the taxi fare pays and the sum total is displayed on Screen 71 of a display 28.

[0037] Next, processing of a card reader 5 is explained with reference to the flow chart of drawing 6. First, as shown in drawing 8 (c), it lets the magnetic card 7 which consists of a handicapped card pass to a card reader 5. Then, it judges whether the magnetic data of a magnetic card 7 were read by the card reader section 51 (step S11).

[0038] When the magnetic data of a magnetic card 7 are read, the card judging section 52 collates the magnetic data of the magnetic card 7 read in the card reader section 51, and the information about an usable card, and dealings authentication of a magnetic card 7 judges whether it is O.K. (step S13). Here, if dealings are O.K., that will be displayed by lighting of the LED section 59, for example, green light emitting diode, (not shown), and as long as dealings are NG, that may be displayed by lighting of the LED section 59, for example, red light emitting diode, (not shown).

[0039] When dealings authentication of a magnetic card 7 is O.K., the discount judging section 53 judges whether a magnetic card 7 is a discount card by whether discount information as shown in drawing 4 is included in the magnetic data of a magnetic card 7 (step S15). If it is the handicapped, since "10 H" is memorized by the discount classification information on a magnetic card 7, it turns out that the magnetic card 7 is a handicapped member's card.

[0040] When magnetic cards 7 are discount cards, such as a handicapped card, the discount card judging section 53 outputs the discount information memorized by the magnetic card 7 to the freight tariff unit 2 with outside through a printer 4 (step S17). In addition, when a magnetic card 7 is not a discount card, the magnetic card is processed as a usual card which does not discount the taxi fare (step S19).

[0041] Next, with reference to the flow chart of drawing 7, processing of the freight tariff unit 2 with outside is explained. When it judges whether the external freight tariff unit 2 received discount information from the card reader 5 (step S31) and discount information is received, the discount rate calculation section 23 computes a discount rate based on the taxi fare information from a taximeter 1, and the discount information from the card reader 5 through a printer 4.

[0042] A display 28 displays the discount rate computed in the discount rate calculation section 23 (step S33). If the discount rate to the handicapped is 10%, as shown in drawing 8 (c), the taxi fare will be displayed on Screen 71 of a display 28 as "900."

[0043] If a magnetic card 7 is a prepaid card, the write-in amount-of-money calculation section 24 judges whether it is below the dealings limit the discount rate computed by the discount rate calculation section 23 was remembered to be by the magnetic card 7, and when a discount rate is below a dealings limit, it will compute the difference which deducted the discount rate from the dealings limit as the write-in amount of money. That is, settlement-of-accounts information is created and it outputs to a card reader 5 through a printer 4. The card reader section 51 writes the settlement-of-accounts information in a magnetic card 7 (step S35).

[0044] Furthermore, when it is judged whether the write-in carbon button 25 was turned on (step S37) and the write-in carbon button 25 is turned on, the discount rate calculation section 23 writes settlement-of-accounts information in a memory card 3 (step S39).

[0045] Thus, according to the gestalt of operation, since the taxi fare is automatically discounted by reading the magnetic card 7 which memorized discount information, without pushing an elderly-people discount carbon button or a handicapped discount carbon button, collection of operation mistakes, such as a failure of a carbon button and a push error of a carbon button, and error information is lost.

[0046] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to specific persons, such as elderly people and the handicapped, exact discount of the taxi fare to a specific person can be performed.

[0047] Moreover, since discount classification information, such as elderly people or the handicapped, discount rate information, and settlement-of-accounts classification information are memorized by the magnetic card 7, the settlement-of-accounts information according to various exceptions can collect automatically only by reading such information. Furthermore, with the gestalt of operation, although the taxi fare was settled with the magnetic card 7 of a prepaid format, the taxi fare can settle cash, postPEIDO, and prepaid either by referring to the settlement-of-accounts classification information memorized by the magnetic card 7.

[0048] In addition, this invention is not limited to the gestalt of operation. With the gestalt of operation, although the display 28 was formed only in the freight tariff unit 2 with outside, a display 28 may be formed in the freight tariff unit 2 with outside, and a card reader 5, for example. In this case, the taxi fare before giving a discount to the display 28 of the freight tariff unit 2 with outside may be displayed, and the taxi fare after giving a discount to the display 28 of a card reader 5 may be displayed. Moreover, a display 28 may be formed in a printer 4 and the handicap ten key 6, and the taxi fare after discount may be displayed. Moreover, although the magnetic card 7 was used with the gestalt of operation, an integrated-circuit (IC) card may be used instead of a magnetic card 7.

[0049] Furthermore, although discount rate information was memorized to the magnetic card 7, you may make it memorize this discount rate information with the gestalt of operation to the freight tariff unit 2 with outside, a printer 4, or a card reader 5.

[0050] That is, the discount rate table which memorized only discount classification information and settlement-of-accounts classification information as discount information, and memorized the discount rate information corresponding to this discount classification information to the magnetic card 7 is prepared in the freight tariff unit 2 with outside, a printer 4, or a card reader 5. And the taxi fare can be discounted by reading the discount rate information corresponding to the discount classification information memorized by the magnetic card 7 by referring to a discount rate table.

[0051]

[Effect of the Invention] According to this invention, the tariff calculation section computes the taxi fare based on the mileage and the transit time of a taxi. The margin transaction data and discount information which were memorized by the transaction card are read by the card read station. Collate the information about the usable card beforehand remembered to be margin transaction data with which the card judging section was read by memory, and dealings authentication of a transaction card is judged. When dealings of transaction cards are attested, the discount rate calculation section computes the discount rate of a taxi based on discount information and the taxi fare computed in the tariff calculation section.

[0052] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to a specific person, exact discount of the taxi fare to a specific person can be performed.

[0053] Moreover, the automatic collection of the settlement-of-accounts information according to various exceptions can be carried out only by reading the discount classification information, discount rate information, and settlement-of-accounts classification information which were memorized by the transaction card by the card read station.

TECHNICAL FIELD

[Field of the Invention] This invention relates to the taxi fare discount equipment which discounts an entrainment tariff, when PAX is specific persons, such as elderly people and the handicapped, in case the entrainment tariff of a taxi is paid using a card.

PRIOR ART

[Description of the Prior Art] The taxi fare equipment which settles the entrainment tariff of a taxi using a magnetic card etc. is conventionally carried in a taxi car. As this conventional kind of taxi fare equipment, the card-ized system of the taxi indicated by JP,6-75273,B is known, for example.

[0003] In the card-ized system of the taxi indicated by this official report, if an operator card is set to a card lead writer, the criteria data needed for the tariff operation memorized by the operator card will be read by the card lead writer, and that criteria data will be inputted into a microcomputer. And when the PAX gets on, entrainment ground data and entrainment time-of-day data are memorized by memory as daily report data.

[0004] Next, the calculated taxi fare is displayed on a display until the operation of the taxi fare is started, the tariff addition per time amount etc. calculates in termination of the starting fare, and the tariff addition list per mileage based on mileage data and time-of-day data and alighting ground data are inputted. And when the PAX arrives at the destination and gets off, alighting ground data are inputted, the operation of the taxi fare is suspended, and the taxi fare is memorized by memory.

[0005] Furthermore, the contents of the PAX cards, such as a prepaid (prepayment) card, are read by the card lead writer, the PAX card distinguishes that it is a predetermined card, and if the PAX card is a predetermined card, the taxi fare memorized by memory can be settled with a PAX card.

[0006] On the other hand, when there is presentation of the elderly-people card by elderly people or presentation of the handicapped card by the handicapped, the elderly-people discount carbon button or handicapped discount carbon button prepared in the freight tariff unit with outside is pushed.

[0007] Then, a freight tariff unit with outside discounts the taxi fare with the discount signal from a discount carbon button. And a handicapped card or an elderly-people card is read by the card reader, and the display tariff with outside displayed on the freight tariff unit with outside is settled.

EFFECT OF THE INVENTION

[Effect of the Invention] According to this invention, the tariff calculation section computes the taxi fare based on the mileage and the transit time of a taxi. The margin transaction data and discount information which were memorized by the transaction card are read by the card read station. Collate the information about the usable card beforehand remembered to be margin transaction data with which the card judging section was read by memory, and dealings authentication of a transaction card is judged. When dealings of transaction cards are attested, the discount rate calculation section computes the discount rate of a taxi based on discount information and the taxi fare computed in the tariff calculation section.

[0052] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to a specific person, exact discount of the taxi fare to a specific person can be performed.

[0053] Moreover, the automatic collection of the settlement-of-accounts information according to various exceptions can be carried out only by reading the discount classification information, discount rate information, and settlement-of-accounts classification information which were memorized by the transaction card by the card read station.

TECHNICAL PROBLEM

[Problem(s) to be Solved by the Invention] However, the operator needed to perform discount actuation for pushing an elderly-people discount carbon button or a handicapped discount carbon button, and the actuation was troublesome. Moreover, although the PAX is elderly people or the handicapped, an operator may forget to push an elderly-people carbon button or a handicapped carbon button. In such a case, although the PAX is elderly people or the handicapped, it will process at the usual tariff.

[0009] Moreover, also when operation mistakes, such as a push error of a carbon button which pushes a handicapped carbon button for the place which should push an elderly-people carbon button, were carried out, it was. For this reason, there was a problem that exact discount of the taxi fare to specific persons, such as elderly people and the handicapped, could not be performed.

[0010] This invention makes it a technical problem to offer the taxi fare discount equipment which can perform exact discount of the taxi fare to a specific person while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to specific persons, such as elderly people and the handicapped.

MEANS

[Means for Solving the Problem] This invention adopted the following means, in order to solve said technical problem. The tariff calculation section in which invention of claim 1 computes the taxi fare based on the mileage and the transit time of a taxi, The transaction card which memorized discount information to show discounting the taxi fare to a specific person while memorizing margin transaction data, The card read station which reads the margin transaction data memorized by this transaction card and said discount information, The card judging section which collates the information about the usable card beforehand remembered to be margin transaction data read by this card read station by memory, and judges dealings authentication of said transaction card, When dealings of said transaction cards are attested by this card judging section, it is characterized by having the discount rate calculation section which computes the discount rate of a taxi based on the discount information read by said card read station, and the taxi fare computed in said tariff calculation section.

[0012] According to this invention, the tariff calculation section computes the taxi fare based on the mileage and the transit time of a taxi. The margin transaction data and discount information which were memorized by the transaction card are read by the card read station. Collate the information about the usable card beforehand remembered to be margin transaction data with which the card judging section was read by memory, and dealings authentication of a transaction card is judged. When dealings of transaction cards are attested, the discount rate calculation section computes the discount rate of a taxi based on discount information and the taxi fare

computed in the tariff calculation section.

[0013] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to a specific person, exact discount of the taxi fare to a specific person can be performed.

[0014] Like invention of claim 2, it is characterized by memorizing the settlement-of-accounts classification information on discount rate information showing the discount rate of discount classification information to show the classification of tariff discount to said specific person as said discount information, and a tariff and cash, prepaid ones, or postPEIDO at least at said transaction card.

[0015] According to this invention, the automatic collection of the settlement-of-accounts information according to various exceptions can be carried out only by reading the discount classification information, discount rate information, and settlement-of-accounts classification information which were memorized by the transaction card by the card read station.

[0016] Discount classification information to show the classification of tariff discount to said specific person in said transaction card as said discount information is memorized like invention of claim 3, and the discount rate table which memorized discount rate information to show the discount rate of a tariff corresponding to the discount classification information memorized by said transaction card may be prepared further.

[0017] Invention of claim 4 may be equipped with the write-in amount-of-money calculation section which computes the difference which judged whether it was below the amount of money the amount of money was remembered to be by said transaction card as said margin transaction data, and the discount rate computed in said discount rate calculation section was further remembered to be by said transaction card, and deducted said discount rate from said amount of money when a discount rate was said below amount of money as the write-in amount of money to said transaction card.

[0018]

[Embodiment of the Invention] Hereafter, the gestalt of operation of the taxi fare discount equipment of this invention is explained to a detail with reference to a drawing. The configuration block Fig. of the gestalt of operation of taxi fare discount equipment is shown in drawing 1. The taxi fare discount equipment shown in drawing 1 has a taximeter 1, the freight tariff unit 2 with outside, a memory card 3, a printer 4, a card reader 5, the handicap ten key 6, and a magnetic card 7, and is constituted. The freight tariff unit 2 with outside has the memory card reader 21, a central processing unit (CPU is called hereafter.) 22, the write-in carbon button 25, and a display 28.

[0019] A memory card 3 memorizes criteria data, operator data, etc. which are needed for a tariff operation. The criteria data needed for a tariff operation are an addition tariff per time amount etc. at the starting fare and the addition tariff list per mileage.

[0020] The memory card reader 21 reads criteria data etc. in a memory card 3, and sends them out to a taximeter 1 through CPU22. The memory card reader 21 writes the operation daily report data through CPU22 from a taximeter 1 in a memory card 3. As this operation daily report data, they are the entrainment ground, entrainment time of day, the alighting ground, alighting time of day, a tariff, etc., for example.

[0021] A taximeter 1 constitutes the tariff calculation section and computes the taxi fare based on the mileage of criteria data and a taxi car, and the information on the transit time from a memory card 3. The freight tariff unit 2 with outside performs settlement-of-accounts processing of the taxi fare based on the magnetic data outputted from a card reader 5 through the taxi fare

information and the printer 4 from a taximeter 1.

[0022] CPU22 controls each part and has the discount rate calculation section 23, the write-in amount-of-money calculation section 24, a read only memory (ROM) 26, and random access memory (RAM) 27. CPU22 displays the taxi fare from a taximeter 1 on a display 28.

[0023] The discount rate calculation section 23 computes a discount rate based on the taxi fare information from a taximeter 1, and the discount information later mentioned from the card reader 5 through a printer 4. Moreover, when the write-in carbon button 25 is turned on, operator data, such as settlement-of-accounts information, are outputted to the memory card reader 21. A display 28 displays the discount rate computed in the discount rate calculation section 23.

[0024] The write-in amount-of-money calculation section 24 judges whether it is below the dealings limit the discount rate computed by the discount rate calculation section 23 was remembered to be by the magnetic card 7, and when a discount rate is below a dealings limit, it computes the difference which deducted the discount rate from the dealings limit as the write-in amount of money. The write-in amount-of-money calculation section 24 outputs said write-in amount of money to a card reader 5 through a printer 4. The card reader section 51 writes the write-in amount of money in the magnetic card 7 as a transaction card.

[0025] The detailed configuration block Fig. of a printer 4 is shown in drawing 2. The interface section with outside which manages I/O with the printer unit section 41 on which the printer 4 shown in drawing 2 prints the data from a card reader 5, or the data from the handicap ten key 6, and the freight tariff unit 2 with outside (The I/F section with outside is called hereafter.) 42, the handicap ten key interface section which manages I/O with the handicap ten key 6 (the handicap ten key I/F section is called hereafter.) 43, the card reader interface section which manages I/O with a card reader 5 (the card reader I/F section is called hereafter.) It consists of a power source 48 which supplies power to 44, and CPU45 and CPU45 which have ROM46 and RAM47 and control each part, and a control unit 49 which performs print actuation of data.

[0026] The detailed configuration block Fig. of a card reader 5 is shown in drawing 1 and drawing 3. As shown in drawing 1, a card reader 5 has the card reader section 51 which reads the magnetic data memorized by the magnetic card 7, the card judging section 52, and the discount card judging section 53.

[0027] The card judging section 52 collates the information about the usable card memorized beforehand with the magnetic data and ROM of the magnetic card 7 read in the card reader section 51, and judges dealings authentication of a magnetic card 7.

[0028] In addition, the information about an usable card is good to memorize to EEPROM (not shown) prepared in the card reader 5. This EEPROM is a read-only memory which eliminates the memorized information electrically and memorizes a new program. Data, such as a personal identification number of the ID code and cardholder who show that it is a magnetic card 7 to the magnetic data of a magnetic card 7 if it is the card of a postPEIDO (deferred payment) format, and an expiration date of a card, are memorized.

[0029] The discount card judging section 53 judges whether a magnetic card 7 is a discount card by whether discount information to show discounting the taxi fare to the handicapped or elderly people is included in the magnetic data of a magnetic card 7. The discount card judging section 53 outputs the discount information memorized by the magnetic card 7 to the freight tariff unit 2 with outside through a printer 4, when a magnetic card 7 is a discount card.

[0030] As shown in a magnetic card 7 at drawing 4, settlement-of-accounts classification information to show the classification of settlement of accounts of tariffs, such as discount rate information to show the discount rate of the tariff to discount classification information, elderly

people, or the handicapped to show the classification of tariff discount, such as elderly people or the handicapped, as discount information etc., cash, prepaid ones, or postPEIDO, is memorized. [0031] It is shown that a discount card is a handicapped member's card if discount classification information is "10 H", and if discount classification information is "11 H", it is shown that a discount card is an elderly-people member's card. As discount rate information, numeric values, such as 10% and 20 etc.%, are memorized, for example.

[0032] Furthermore, a card reader 5 consists of the card reader section 51, the printer interface section (the printer I/F section is called hereafter.) 54 which manages I/O with a printer 4, CPU55 which has ROM56 and RAM57, a power source 58, and the light emitting diode section (the LED section is called hereafter.) 59, as shown in drawing 3. CPU55 outputs the purport whose dealings are O.K. to the LED section 59, when authentication of a magnetic card 7 is made by the card judging section 52.

[0033] The detailed configuration block Fig. of the handicap ten key 6 is shown in drawing 5. The handicap ten key 6 shown in drawing 5 consists of the ten key section 63 which inputs ten key data, such as the display 61 which displays ten key data, the printer interface section (the printer I/F section is called hereafter.) 62 which manages I/O with a printer 4, and a personal identification number, and a power source 67 which supplies power to CPU64 and CPU64 which have ROM65 and RAM66 and control each part. CPU64 performs collating with the personal identification number of the normal memorized by the personal identification number inputted from the ten key section 63, and ROM65, and when a personal identification number is in agreement, it conducts dealings of the magnetic card 7 of a postPEIDO format to O.K.

[0034] Next, by referring to the drawing of drawing 6 thru/or drawing 8 explains actuation of the taxi fare discount equipment constituted in this way. First, if a memory card 3 is set to the memory card reader 21, the criteria data needed for the tariff operation memorized by the memory card 3 will be read by the memory card reader 21, and the criteria data will be inputted into a taximeter 1 through CPU22.

[0035] Next, the operation of the taxi fare is started by the taximeter 1 and the tariff addition per time amount etc. calculates in termination of the starting fare, and the tariff addition list per mileage based on mileage data and time-of-day data. A metaphor is set to "1000" as **** shows drawing 8 (a). And the calculated taxi fare is inputted into the freight tariff unit 2 with outside from a taximeter 1, and is displayed on Screen 71 of a display 28 until a payment tariff signal is inputted.

[0036] Furthermore, when the PAX arrives at the destination, as a payment tariff signal is inputted, the operation of the taxi fare is suspended and it is shown in drawing 8 (b), the taxi fare pays and the sum total is displayed on Screen 71 of a display 28.

[0037] Next, processing of a card reader 5 is explained with reference to the flow chart of drawing 6. First, as shown in drawing 8 (c), it lets the magnetic card 7 which consists of a handicapped card pass to a card reader 5. Then, it judges whether the magnetic data of a magnetic card 7 were read by the card reader section 51 (step S11).

[0038] When the magnetic data of a magnetic card 7 are read, the card judging section 52 collates the magnetic data of the magnetic card 7 read in the card reader section 51, and the information about an usable card, and dealings authentication of a magnetic card 7 judges whether it is O.K. (step S13). Here, if dealings are O.K., that will be displayed by lighting of the LED section 59, for example, green light emitting diode, (not shown), and as long as dealings are NG, that may be displayed by lighting of the LED section 59, for example, red light emitting diode, (not shown).

[0039] When dealings authentication of a magnetic card 7 is O.K., the discount judging section 53 judges whether a magnetic card 7 is a discount card by whether discount information as shown in drawing 4 is included in the magnetic data of a magnetic card 7 (step S15). If it is the handicapped, since "10 H" is memorized by the discount classification information on a magnetic card 7, it turns out that the magnetic card 7 is a handicapped member's card.

[0040] When magnetic cards 7 are discount cards, such as a handicapped card, the discount card judging section 53 outputs the discount information memorized by the magnetic card 7 to the freight tariff unit 2 with outside through a printer 4 (step S17). In addition, when a magnetic card 7 is not a discount card, the magnetic card is processed as a usual card which does not discount the taxi fare (step S19).

[0041] Next, with reference to the flow chart of drawing 7, processing of the freight tariff unit 2 with outside is explained. When it judges whether the external freight tariff unit 2 received discount information from the card reader 5 (step S31) and discount information is received, the discount rate calculation section 23 computes a discount rate based on the taxi fare information from a taximeter 1, and the discount information from the card reader 5 through a printer 4.

[0042] A display 28 displays the discount rate computed in the discount rate calculation section 23 (step S33). If the discount rate to the handicapped is 10%, as shown in drawing 8 (c), the taxi fare will be displayed on Screen 71 of a display 28 as "900."

[0043] If a magnetic card 7 is a prepaid card, the write-in amount-of-money calculation section 24 judges whether it is below the dealings limit the discount rate computed by the discount rate calculation section 23 was remembered to be by the magnetic card 7, and when a discount rate is below a dealings limit, it will compute the difference which deducted the discount rate from the dealings limit as the write-in amount of money. That is, settlement-of-accounts information is created and it outputs to a card reader 5 through a printer 4. The card reader section 51 writes the settlement-of-accounts information in a magnetic card 7 (step S35).

[0044] Furthermore, when it is judged whether the write-in carbon button 25 was turned on (step S37) and the write-in carbon button 25 is turned on, the discount rate calculation section 23 writes settlement-of-accounts information in a memory card 3 (step S39).

[0045] Thus, according to the gestalt of operation, since the taxi fare is automatically discounted by reading the magnetic card 7 which memorized discount information, without pushing an elderly-people discount carbon button or a handicapped discount carbon button, collection of operation mistakes, such as a failure of a carbon button and a push error of a carbon button, and error information is lost.

[0046] That is, while losing the discount actuation by a carbon button etc. by discounting the taxi fare automatically to specific persons, such as elderly people and the handicapped, exact discount of the taxi fare to a specific person can be performed.

[0047] Moreover, since discount classification information, such as elderly people or the handicapped, discount rate information, and settlement-of-accounts classification information are memorized by the magnetic card 7, the settlement-of-accounts information according to various exceptions can collect automatically only by reading such information. Furthermore, with the gestalt of operation, although the taxi fare was settled with the magnetic card 7 of a prepaid format, the taxi fare can settle cash, postPEIDO, and prepaid either by referring to the settlement-of-accounts classification information memorized by the magnetic card 7.

[0048] In addition, this invention is not limited to the gestalt of operation. With the gestalt of operation, although the display 28 was formed only in the freight tariff unit 2 with outside, a display 28 may be formed in the freight tariff unit 2 with outside, and a card reader 5, for

example. In this case, the taxi fare before giving a discount to the display 28 of the freight tariff unit 2 with outside may be displayed, and the taxi fare after giving a discount to the display 28 of a card reader 5 may be displayed. Moreover, a display 28 may be formed in a printer 4 and the handicap ten key 6, and the taxi fare after discount may be displayed. Moreover, although the magnetic card 7 was used with the gestalt of operation, an integrated-circuit (IC) card may be used instead of a magnetic card 7.

[0049] Furthermore, although discount rate information was memorized to the magnetic card 7, you may make it memorize this discount rate information with the gestalt of operation to the freight tariff unit 2 with outside, a printer 4, or a card reader 5.

[0050] That is, the discount rate table which memorized only discount classification information and settlement-of-accounts classification information as discount information, and memorized the discount rate information corresponding to this discount classification information to the magnetic card 7 is prepared in the freight tariff unit 2 with outside, a printer 4, or a card reader 5. And the taxi fare can be discounted by reading the discount rate information corresponding to the discount classification information memorized by the magnetic card 7 by referring to a discount rate table.

DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] It is the configuration block Fig. showing the gestalt of operation of the taxi fare discount equipment of this invention.

[Drawing 2] It is the configuration block Fig. showing the detail of a printer.

[Drawing 3] It is the configuration block Fig. showing the detail of a card reader.

[Drawing 4] It is drawing showing the data format of card data.

[Drawing 5] It is the configuration block Fig. showing the detail of a handicap ten key.

[Drawing 6] It is the flow chart which shows processing of a card reader.

[Drawing 7] It is the flow chart which shows processing of a freight tariff unit with outside.

[Drawing 8] It is drawing for explaining automatic discount processing of a freight tariff with outside.

[Description of Notations]

1 Taximeter

2 Freight Tariff Unit with Outside

3 Memory Card

4 Printer

5 Card Reader

6 Handicap Ten Key

7 Magnetic Card

21 Memory Card Reader

23 Discount Rate Calculation Section

24 Write-in Amount-of-Money Calculation Section

25 Write-in Carbon Button

28 Display

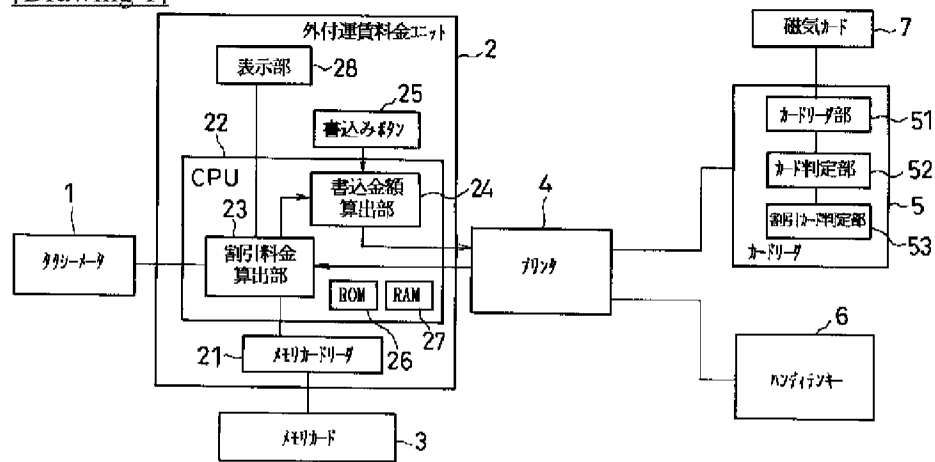
51 Card Reader Section

52 Card Judging Section

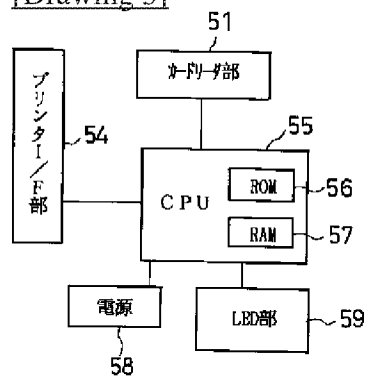
53 Discount Card Judging Section

DRAWINGS

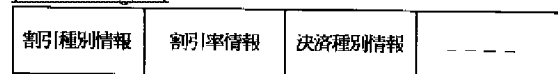
[Drawing 1]



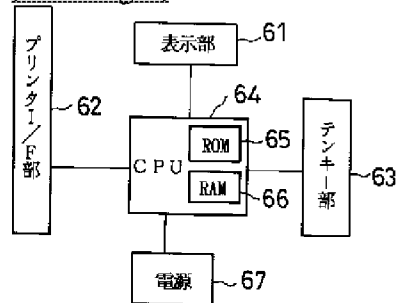
[Drawing 3]



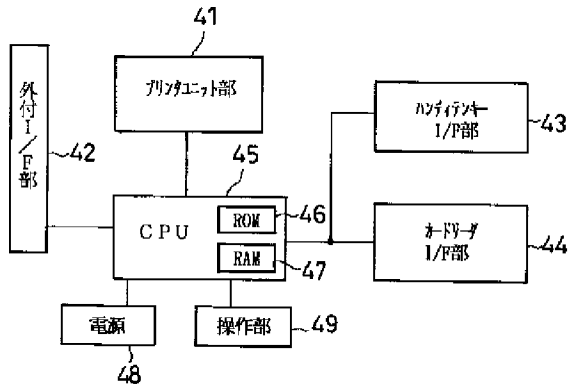
[Drawing 4]



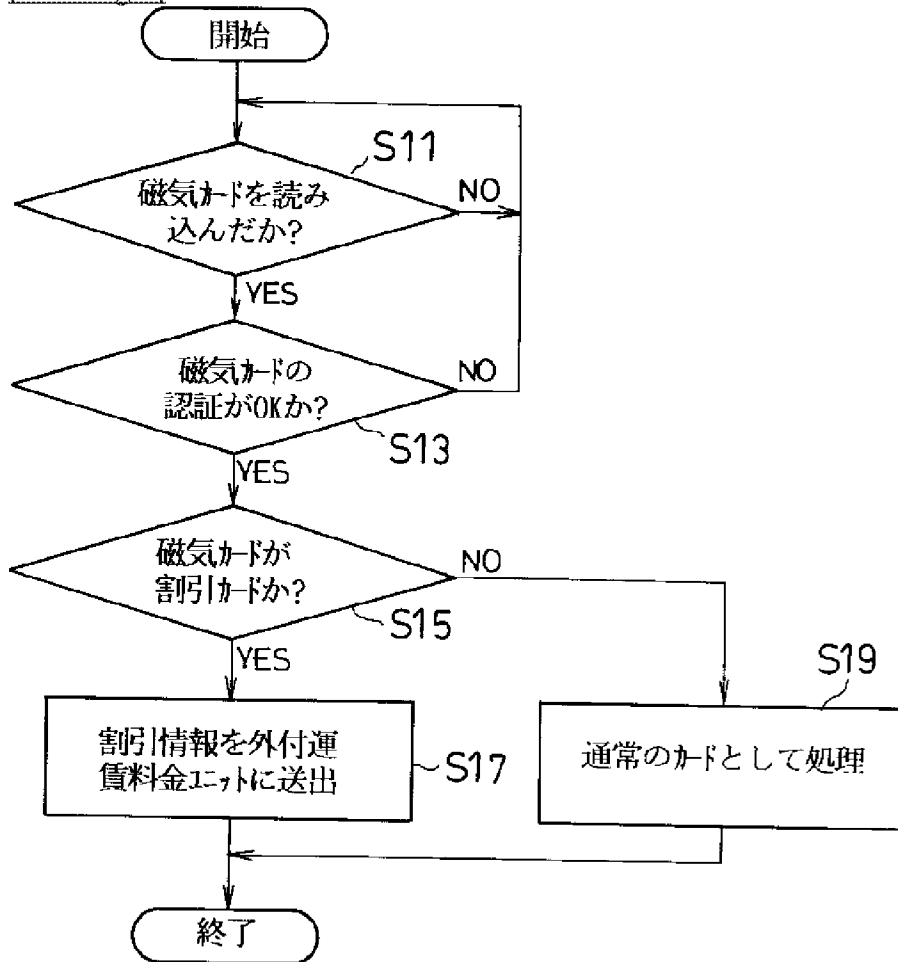
[Drawing 5]



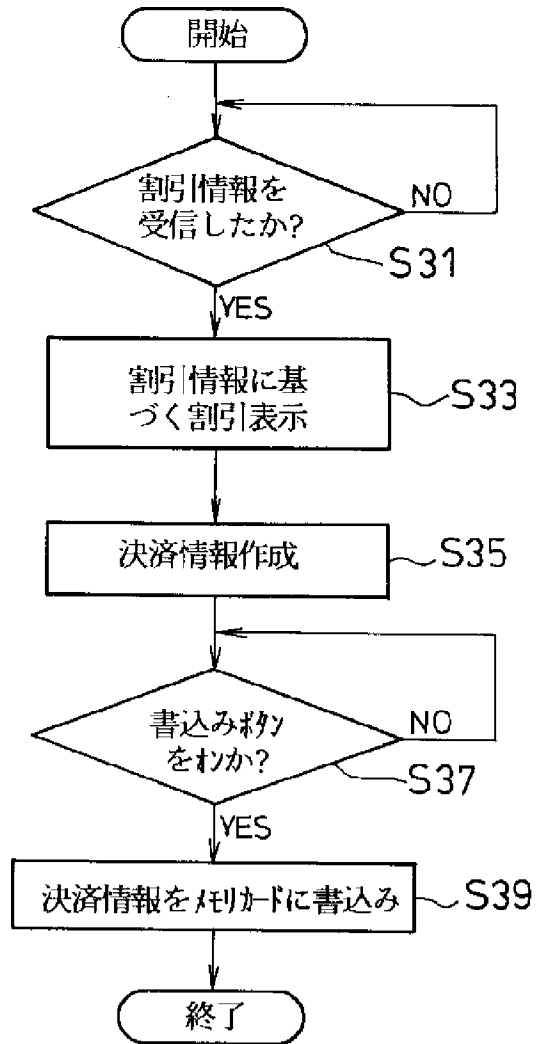
[Drawing 2]



[Drawing 6]



[Drawing 7]



[Drawing 8]

